



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/734,616

12/12/2003

Raymond C. Kurzweil

14202-004001

1709

26161 7590 03/07/2007

FISH & RICHARDSON PC

P.O. BOX 1022

MINNEAPOLIS, MN 55440-1022

EXAMINER

BEHNCKE, CHRISTINE M

ART UNIT

PAPER NUMBER

3661

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

03/07/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.	Applicant(s)	
10/734,616	KURZWEIL, RAYMOND C.	
Examiner	Art Unit	
Christine M. Behncke	3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the Amendment and Remarks filed 4 December 2006, in which claims 1-21 were presented for examination.

Response to Arguments

2. Applicant's arguments filed 4 December 2006 have been fully considered but they are not persuasive. Applicant contends the applied reference Choy does not teach a body suit, merely gloves. The Examiner respectfully disagrees. Based on the broadest reasonable interpretation of the term "body suit", Choy anticipates the claimed language in the description including, among other examples, a data glove worn by the user to provide and simulate tactile interaction (page 10, lines 5-23), and further using a data glove and similar device in order to track motion of the user's body, including a multiplicity of sensors detecting motion of different parts of the body. Applicant contends the applied reference Choy does not describe a humanoid robot having tactile sensors along the exterior that send tactile sensors to the network. The Examiner respectfully disagrees and refers the Applicant to page 12, lines 28-34, which further describes the doll being required to send tactile signals received of where/pressure it is being touched to the PC/network. Applicant contends the applied references Choy in view of Abbasi do not suggest a robot comprising a body and a camera and a microphone coupled to the body. The Examiner respectfully disagrees. Applicant's argues against the references individually; one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231

USPQ 375 (Fed. Cir. 1986). Choy teaches a robot comprising a body and the importance of linking sound audio cards between users to allow verbal communication (page 18, lines 15-18) and Abbasi suggests the specific use of a microphone and a camera. Applicant contends that the combination of Choy in view of Abbasi is not obvious because Choy does not send signals from the robot to the user and further the motivation for obviousness is inadequate. The Examiner respectfully disagrees. Choy teaches a system for user-to-user interaction over a network to simulate human interactive systems using audio, visual and tactile reproduction means (Abstract), wherein each user has an avatar; the avatar's actions are controlled by the sensed movements of the respective user. Abbasi teaches a system for transmitting tactile or other physical stimulus from one human user to another using mechanical surrogates, specifically the mechanical surrogate includes anatomical components, the specific suggestion of use of a video camera and a microphone (Figure 1, column 2, lines 1-34), among other teachings. It would have been obvious to one of ordinary skill in the art to combine the system of Choy with the teachings of Abbasi because both references combine a virtual reality environment with mechanical surrogates for users to interact over distances, transmitting tactile, visual, and audio information as stimulation/communication (Abbasi: column 1, lines 36-63), and both references suggest the importance of audio and visual communication between users (Choy: page 1, lines 16-29). Abbasi teaches explicitly the use of a camera and microphone, whereas Choy more generally describes a audio and visual component. Applicant contends the applied references do not teach the limitation of as set of goggles included rendering

video signals. The Examiner respectfully disagrees. In the broadest reasonable interpretation, the headset of Choy including embedded transducers to render video and audio signals to a user received from the network meet the claimed limitations.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-2 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Choy et al., PCT Publication No. WO00/59581.

(Claims 1 and 13) Choy et al. discloses a virtual reality encounter system and method comprising, a humanoid robot having tactile sensors positioned along the exterior of the robot (page 3, lines 3-11 and page 10, lines 25-33), the sensors sending tactile signals to a communications network (page 12, lines 16-34 and page 13, lines 18-19); and a body suit having tactile actuators (page 10, lines 5-23), the actuators receiving the tactile signals from the communications network (page 10, lines 5-23 and page 4, lines 33-37).

(Claims 2 and 14) Choy et al. further discloses motion sensors positioned throughout the body suit (page 9, lines 3-27), the motion sensors sending motion signals corresponding to movements of each sensor relative to a reference point (page 9, lines 17-23), the motion signals transmitted to the communications network (page 18, lines 6-18); and the humanoid robot, receiving, from the communications network, the signals from the motion sensors (page 16, lines 7-16), the signals from the motion

sensors causing a movement of the robot that is correlated to a movement of the body suit (page 4, lines 18-26, page 9, lines 24-27 and page 11, lines 6-9).

(**Claims 3 and 15**) Choy et al. further discloses wherein the robot includes actuators corresponding to the motion sensors, the actuators causing the robot to move (page 11, lines 6-9 and page 12, lines 20-34).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 4-8, 12, 16, 17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choy et al. in view of Abbasi, US Patent No. 6,786,863.

(**Claim 4**) Choy et al. discloses the virtual reality system previously applied to claim 1, further Choy et al. discloses wherein the robot has life-like features (Figure 2), comprising a body (Figure 2 and page 10, line 34-page 11, line 5). Choy et al. does not disclose a camera or a microphone. However, Abbasi teaches a remote physical encounter system comprising a mechanical surrogate with external sensory devices including a camera and a microphone (Column 4, lines 38-42); wherein the camera sends video signals to a communications network (Column 2, lines 54-62); and the microphone sends audio signals to the communications network (Column 2, lines 63-67).

(**Claim 5**) Choy et al. further discloses a virtual reality headset linked to the computer system to provide and display video signals and auditory signals to a user (page 3, line 32-page 4, line 4 and page 5, line 29-page 9, line 12). Abbasi further

teaches conveying video information from a video camera and auditory information from a microphone attached to a first computing device to a second computing device (Figure 1).

(Claim 6) Choy et al. discloses wherein the virtual encounter system is used to connect two users in different locations (page 2, lines 18-21) and wherein one user has one avatar and a second user has a second avatar and the movements of each avatar are controlled directly by the sensed movements of the respective users (page 16, lines 7-16), wherein the users use headsets to receive visual and audio signals (page 5, line 29-page 7, line 2). Abbasi further teaches a remote physical encounter system comprising a second mechanical surrogate with external sensory devices including a second camera and a second microphone (Figure 1).

(Claim 8) Abbasi further teaches wherein the communications network comprises an interface having one or more channels for receiving the audio signals from the microphone and receiving the video signals from the camera (Figure 1); and Choy et al. discloses sending audio and visual signals to the headset of the user (Figure 1 and page 5, line 29-page 7, line 2).

(Claim 16) Choy et al. discloses rendering video signals received from a communications network using a display device embedded in a headset (page 5, line 29-page 7, line 2) and transducing audio signals received from the communications network using a transducer embedded in the headset (page 3, lines 32-page 4, line 4); but does not disclose a microphone and a camera coupled to the robot. However, Abbasi teaches a mechanical surrogate with external sensory devices including a

camera and a microphone (Column 4, lines 38-42); wherein the camera sends video signals to a communications network (Column 2, lines 54-62); and the microphone sends audio signals to the communications network (Column 2, lines 63-67).

(**Claim 17**) Choy et al. discloses sending signals to a communications network from a second robot having life-like features (page 16, lines 7-16) and rendering acquired video and audio signals received from a communications network onto a display and a transducer, respectively, in a user headset (page 3, lines 32-page 4, line 4 and page 5, line 29-page 7, line 2). Choy et al. does not disclose sending audio and video signals from a second microphone and camera coupled to a second robot. However, Abbasi further teaches a remote physical encounter method comprising a second mechanical surrogate with external sensory devices including a second camera and a second microphone and sending said signals to a communications network (Figure 1).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to combine the system of Choy et al. with the teachings of Abbasi because both references combine a virtual reality environment with mechanical surrogates for users to interact over distances, transmitting tactile, visual, and audio information as stimulation/communication (Abbasi: column 1, lines 36-63), and both references suggest the importance of audio and visual communication between users (Choy: page 1, lines 16-29). Abbasi teaches explicitly the use of a camera and microphone, whereas Choy more generally describes an audio and visual component. Further Choy et al. teaches that the use of sight and sound is important for easy communication, as the

combination of touch, audio and visual stimulation is a powerful and effective means of communication (page 1, lines 20-29).

(**Claim 7**) Choy et al. further discloses wherein the communications network comprises: a first communication gateway in the first location and a second communication gateway in the second location (page 12, line 35-page 13, line 19), the second processor connected to the first processor via a network (page 18, lines 6-18).

(**Claims 12 and 21**) Choy et al. further discloses wherein the robot comprises a transmitter to wirelessly send the audio signals, tactile signals, motion signals and the video signals to the communications network (page 14, line 9-page 15, line 16).

Claim Rejections - 35 USC § 103

5. Claims 9-11 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choy et al. in view of Abbasi as applied to claims 5 and 16 above, and further in view of Yee et al., US Patent No. 6,016,385.

(**Claims 9 and 18**) Choy et al. in view of Abbasi teaches the robot including a camera, but neither reference discloses wherein the camera is positioned in the eye socket of the robot. However, Yee et al. teaches a robot system wherein a robot is controlled by the actions of a user at a remote location, the robot body including an eye socket and a camera is positioned in the eye socket (Column 5, lines 11-37).

(**Claims 10 and 19**) Further Yee et al. teaches, wherein the body of the robot includes an ear canal and a microphone is positioned within the ear canal (Column 4, line 52-Column 5, line 1).

Art Unit: 3661

(Claims 11 and 20) Further Yee et al. teaches wherein the headset of the user comprises a receiver to receive the video signals (Column 5, lines 11-37).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to combine the virtual reality system of Choy et al. in view of Abbasi with the teachings of Yee et al. because as Yee et al. suggests, the virtual interface of the robot, camera in eye socket and microphone in ears, is intended to make the robot more friendly in appearance to a second user, and the microphones in the ears add the benefit of being able to relay to the user a sense of direction of a sound and the cameras in the left and right eye sockets provide the user with information in a three dimensional format similar to how a human would normally view an environment (Column 4, line 52-Column 5, line 49).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine M. Behncke whose telephone number is (571) 272-8103. The examiner can normally be reached on Monday - Friday 8:30 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3661

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CMB



THOMAS BLACK
SUPERVISORY PATENT EXAMINER